

## WHAT IS CLAIMED IS:

1. An ultrasonic diagnostic imaging system including a main body housing imaging electronics and a control panel coupled to the imaging electronics comprising:

a flat panel display electrically coupled to the imaging electronics; and

an articulating arm assembly to which the flat panel display is connected for adjusting the viewing position of the flat panel display, the articulating arm assembly including a first arm movably mounted to the main body and a second arm movably connected to the first arm and to the flat panel display, wherein at least one of the arms includes a 4-bar linkage.

2. The ultrasonic diagnostic imaging system of Claim 1, further comprising a wheeled cart on which the main body is mounted.

3. The ultrasonic diagnostic imaging system of Claim 1, wherein the second arm includes a 4-bar linkage.

4. The ultrasonic diagnostic imaging system of Claim 3, wherein the 4-bar linkage includes first and second pivot axes located at an end of the second arm which is connected to the first arm, and third and fourth pivot axes located at an end of the second arm which is connected to the flat panel display.

5. The ultrasonic diagnostic imaging system of Claim 1, further comprising an inter-arm locking mechanism, located on the first and second arms, which acts to lock the two arms together, thereby

restricting relative motion between the two arms.

6. The ultrasonic diagnostic imaging system of Claim 5, wherein the locking mechanism further comprises a user-operated lock release which is operated to cause the locking of the two arms to be released.

7. The ultrasonic diagnostic imaging system of Claim 1, wherein the articulating arm assembly further includes a first vertical pivot axis located at an end of the first arm which is movably mounted to the first body, and a second vertical pivot axis located at an end of the first arm which is connected to the second arm.

8. The ultrasonic diagnostic imaging system of Claim 7, wherein the articulating arm assembly further includes a third vertical pivot axis located at an end of the second arm which is connected to the flat panel display, and a horizontal pivot axis located at the end of the second arm which is connected to the flat panel display.

9. The ultrasonic diagnostic imaging system of Claim 7, wherein the arc of travel of the first arm about the first vertical pivot axis is constrained to be less than  $360^\circ$ , and wherein the arc of travel of the second arm about the second vertical axis is constrained to be less than  $360^\circ$ .

10. The ultrasonic diagnostic imaging system of Claim 1, wherein the second arm includes a 4-bar linkage, and wherein the second arm further includes: a pneumatic piston which acts to provide a force

which at least partially offsets the weight of the flat panel display.

5        11. The ultrasonic diagnostic imaging system of Claim 10, further comprising an adjustment mechanism, coupled to the pneumatic piston, which is operable to adjust the force provided by the pneumatic piston.

10       12. The ultrasonic diagnostic imaging system of Claim 11, wherein the pneumatic piston is adjusted to provide a balancing counter-weight force when the second arm is oriented in a horizontal orientation.

15       13. The ultrasonic diagnostic imaging system of Claim 1, wherein the first arm exhibits a fixed upward inclination from an end which is connected to the main body to a second end which is elevated above the connection to the main body, and the second arm includes a 4-bar linkage.

20       14. The ultrasonic diagnostic imaging system of Claim 3, wherein the 4-bar linkage includes first and second upper bars coupled between the first and third pivot axes and third and fourth lower bars coupled between the second and fourth pivot axes,

25       wherein the first bar is rigidly connected to the second bar and the third bar is rigidly connected to the fourth bar.

30       15. An ultrasonic diagnostic imaging system having a main body housing imaging electronics comprising:

      a flat panel display electrically coupled to the imaging electronics; and

35       an articulating arm assembly coupled to the flat

panel display to enable repositioning of the flat panel display, the articulating arm assembly including:

- 5 a first arm exhibiting a fixed inclination from a first mounting end and a second joint end; and
- a second arm exhibiting a variable inclination from a first end which is coupled to the second joint end of the first arm, and a second end which is coupled to the flat panel display.

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16. The ultrasonic diagnostic imaging system of Claim 15, wherein the second arm includes a 4-bar linkage which provides the second arm with the variable inclination.

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- 17. The ultrasonic diagnostic imaging system of Claim 15, further comprising a first pivot axis located at the first mounting end of the first arm; a second pivot axis located at the second joint end of the first arm, and a third pivot axis located at the second end of the second arm.

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- 18. An ultrasonic diagnostic imaging system including a wheeled cart and a main body housing imaging electronics and located on the wheeled cart comprising:

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- a control panel located on the wheeled cart and electrically connected to the imaging electronics, the control panel being laterally articulable;
- 30 a flat panel display electrically coupled to the imaging electronics; and
- an articulation mechanism, having a mounting end coupled to the wheeled cart or main body and a second end coupled to the flat panel display, and operable to laterally reposition the viewing position of the

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flat panel display.

19. The ultrasonic diagnostic imaging system of Claim 18, wherein the articulating mechanism includes first and second articulating arms, at least one of which includes a 4-bar linkage.

20. The ultrasonic diagnostic imaging system of Claim 18, wherein the articulation mechanism further includes a plurality of vertical pivot axes which enable lateral articulation of the flat panel display, and a 4-bar linkage which enables vertical articulation of the flat panel display.